

WE CLAIM

1. A method of communicating between client applications  
5 operating in one or more workstations, comprising the steps  
of:

(a) transmitting an interest object associated with an event  
10 from a first client application to a server;

(b) receiving the interest object in the server and  
retransmitting the interest object from the server to a  
second client application;

15 (c) when the second client application practices the event,  
transmitting event information associated with the practice  
of the event from the second client application to the first  
client application without routing the event through the  
server.

20 2. The method of claim 1, wherein the first client  
application is executing in a workstation, the workstation  
including a display and a mouse, the display including a  
window, the window including an open state status icon, the  
25 transmitting step (a) comprising the steps of:

(a1) using said mouse, clicking on said open state status  
icon, and

30 (a2) when the open state status icon is clicked on in  
response to the clicking step (a1), transmitting said  
interest object associated with said event from said first  
client application to said server.

3. The method of claim 1, wherein said first client application stores a plurality of events and a plurality of interest objects associated, respectively, with the plurality of events, further comprising the steps of:

(d) transmitting a second interest object associated with a second event from a further client application to said server and retransmitting said second interest object from said server to said first client application;

(e) receiving said second interest object from said server into said first client application;

(f) comparing by said first client application said second interest object received from said server with said plurality of interest objects stored in said first client application; and

(g) transmitting event information associated with a practice of said second event from said first client application directly to said further client application without routing said second event through said server when, responsive to the comparing step (f), said second interest object corresponds to one of said plurality of interest objects stored in said first client application.

4. The method of claim 3, wherein the first client application is executing in a workstation, the workstation including a display and a mouse, the display including a window, the window including an open state status icon, the transmitting step (a) comprising the steps of:

(a1) using said mouse, clicking on said open state status icon of said first client application, and

(a2) when the open state status icon of said first client application is clicked on in response to the clicking step (a1), transmitting said interest object associated with said event from said first client application to said server.

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5. The method of claim 3, wherein the first client application is executing in a workstation, the workstation including a display and a mouse, the display including a window of said first client application, said window including an event filter icon of said first client application, the display including a subwindow of said first client application when the event filter icon of said first client application is clicked on by the mouse, the subwindow including said event, a send box being associated with said event, and a receive box being associated with said event, the transmitting step (c) including the steps of:

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(c1) using said mouse, clicking on said receive box associated with said event in said subwindow of said first client application, and

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(c2) when the receive box in said subwindow of said first client application is clicked on in response to the clicking step (c1), transmitting said event information associated with the practice of the event from the second client application to the first client application without routing the event through said server.

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6. The method of claim 5, wherein said subwindow of said first client application includes said second event, a send box associated with said second event, and a receive box associated with said second event, the transmitting step (g) including the steps of:

(g1) using said mouse, clicking on said send box associated with said second event in said subwindow of said first client application, and

(g2) when the send box in said subwindow is clicked on in response to the clicking step (g1), transmitting said event information associated with the practice of said second event from said first client application directly to said further client application without routing said second event through said server.

7. Apparatus adapted to be disposed within a first client application for intercommunicating with a second client application, comprising:

setup means including predefinition storage means for selectively predefining and storing one or more events, one or more interest objects corresponding respectively to the one or more events, and one or more functions corresponding respectively to the one or more events, said one or more events including a particular event;

input means for receiving an input from an operator corresponding to the practice of said particular event by said first client application and for presenting one or more functions to the operator in response to receipt of another event; and

transmission and reception means for transmitting said particular event stored in said predefinition storage means to said second client application when said particular event is practiced by said first client application in response to said input provided by said operator via said input means.

8. The apparatus of claim 7, wherein said transmission and reception means receives an interest object from said second client application via a server corresponding to said particular event,

said setup means including filter and session means, said filter and session means comparing said interest object received by said transmission and reception means with said one or more interest objects stored in said predefinition storage means and identifying said particular event when the received interest object corresponds to one of the one or more interest objects stored in said predefinition storage means,

said transmission and reception means transmitting said particular event stored in said predefinition storage means to said second client application when said particular event is identified by said filter and session means and said particular event is practiced by said first client application in response to said input provided by said operator via said input means.

9. The apparatus of claim 8, wherein said transmission and reception means transmits a second interest object corresponding to another particular event to a server, said server retransmitting said interest object to said second client application, said second client application transmitting said another particular event to said first client application when said second client application practices said another particular event,

said transmission and reception means receiving said another particular event from said second client application,

- 5 said filter and session means comparing said another particular event received from said transmission and reception means with said one or more events stored in said predefinition storage means and identifying another particular function among said one or more functions when  
10 said another particular event matches one of said one or more events stored in said predefinition storage means,

15 said input means presenting said another particular function to said operator when said filter and session means identifies said another particular function.

10. A system adapted for intercommunicating between client applications, comprising:

- 20 a first client application adapted to transmit an interest object corresponding to an event;  
a second client application; and  
25 a server operatively interposed between said first client application and said second client application,

said first client application transmitting said interest object to said server,

- 30 said server transmitting said interest object to said second client application,

said second client application transmitting said event directly to said first client application without routing said event through said server in response to said interest object received by said second client application from said server when said second client application practices said event.

11. The system of claim 10, wherein said second client application includes a first means for storing a plurality of events and a plurality of interest objects corresponding, respectively, to said plurality of events,

15 said second client application comparing said interest object received from said server with said plurality of interest objects stored in said first means and transmitting said event directly to said first client application without routing said event through said server when said interest object from said server corresponds to one of said plurality of interest objects stored in said first means.

12. The system of claim 11, wherein said second client application transmits a second interest object corresponding to a second event to said server, said server transmitting said second interest object to said first client application,

said first client application transmitting said second event directly to said second client application without routing said second event through said server in response to said second interest object received by said first client application from said server when said first client application practices said second event.

13. The system of claim 12, wherein said first client application includes a second means for storing a plurality of events and a plurality of interest objects corresponding,  
5 respectively, to said plurality of events,

said first client application comparing said second interest object from said server with said plurality of interest objects stored in said second means and transmitting said  
10 second event directly to said second client application without routing said second event through said server when said second interest object from said server corresponds to one of said plurality of interest objects stored in said second means.

15 14. The system of claim 13, wherein said first client application and said second client application each comprise an interaction display apparatus, a framework apparatus, and an interface setup apparatus operatively interposed between  
20 said interaction display apparatus and said framework apparatus,

25 said interface setup apparatus in said first client application including said second means for storing,

said interface setup apparatus in said second client application including said first means for storing.

30 15. The system of claim 14, wherein said framework apparatus of said second client application transmits said event directly to the framework apparatus of said first client application without routing said event through said server in response to said interest object received by said framework apparatus of said second client application from said server  
35 when said second client application practices said event.



16. The system of claim 15, wherein said framework apparatus of said first client application transmits said second event directly to the framework apparatus of said second client application without routing said second event through said server in response to said second interest object received by said framework apparatus of said first client application from said server when said first client application practices said event.

17. A method of intercommunicating between client applications, comprising the steps of:

(a) transmitting a first interest object associated with a first event from a first client application to a server, said first interest object being transmitted from said first client application to said server when said first client application is interested in receiving event information associated with a practice of said first event by other client applications;

(b) routing said first interest object from said first client application through said server and retransmitting said first interest object from said server to a second client application; and

(c) when said second client application receives said first interest object from said server and when said second client application practices said first event, transmitting event information associated with the practice of said first event from said second client application directly to said first client application, said event information being transmitted directly from said second client application to said first client application without routing said event information [with] said server.

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18. The method of claim 17, further comprising the steps of:

(d) transmitting a revocation object from said first client application to said server, said revocation object being transmitted from said first client application when said first client application is no longer interested in receiving said event information associated with the practice of said first event;

(e) transmitting said revocation object from said server to said second client application; and

(f) when said second client application receives said revocation object and before said second client application practices said event, unregistering within said second client application the interest by said first client application in said event information associated with the practice of said first event,

said event information not being transmitted from said second client application directly to said first client application in response to the unregistering step (f).

19. The method of claim 18, further comprising the steps of:

(g) when said first client application terminates, monitoring by said server the termination of said first client application;

(h) unregistering within said server the interest by said first client application in said event information associated with the practice of said first event in response to the monitoring step (g) when said first client application terminates;

(i) transmitting from said server a revocation object to said second client application in response to the unregistering step (h); and

5 (j) when said second client application receives said revocation object and before said second client application practices said first event, unregistering within said second client application the interest by said first client application in said event information associated with the  
10 practice of said first event,

said event information not being transmitted from said second client application directly to said first client application in response to the unregistering step (j).

15 20. The method of claim 19, further comprising the steps of:

(k) transmitting said interest object, routed through said server during the routing step (b), from said server to a  
20 third client application and registering said interest object within said third client application; and

(l) transmitting said event information associated with the practice of said first event from said third client  
25 application directly to said first client application without routing said event information through said server in response to the registering step (k) when said third client application practices said first event.

30 21. Client application apparatus, comprising:

storage means for storing a plurality of events, a plurality of functions associated, respectively, with the plurality of events, and a plurality of interest objects associated,  
35 respectively, with the plurality of events;

transmission and reception means for transmitting one or more of said plurality of events to other client applications and for receiving one or more of said plurality of events from other client applications; and

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input means for selectively determining how many of said plurality of events stored in said storage means will be transmitted to said other client applications and determining how many of said plurality of events stored in said storage means will be received from said other client applications and generating a signal in response thereto representative of a number of said events that can be transmitted to or received from said other client applications,

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said transmission and reception means transmitting said number of said events stored in said storage means to said other client applications when said client application apparatus practices said number of said events or receiving said number of said events stored in said storage means from said other client applications when said other client applications practice said number of said events in accordance with said signal from said input means.

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22. The client application apparatus of claim 21, wherein said client application apparatus comprises a workstation based system including a display screen and wherein said input means comprises:

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a visual display on said display screen, the visual display including open state status icon means for generating an open state status signal when said open state status icon means is clicked on by an operator, said open state status signal indicating that all of said plurality of events stored in said storage means can be transmitted by said transmission and reception means to said other client application or can be received in said transmission and reception means from

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said other client applications when said open state status icon means is clicked on by an operator.

23. The client application apparatus of claim 21, wherein  
5 said client application apparatus comprises a workstation based system including a display screen and wherein said input means comprises:

10 a visual display on said display screen, the visual display including closed state status icon means for generating a closed state status signal when said closed state status icon means is clicked on by an operator, said closed state status signal indicating that none of said plurality of events stored in said storage means can be transmitted by said  
15 transmission and reception means to said other client application or can be received in said transmission and reception means from said other client applications when said closed state status icon means is clicked on by an operator.

20 24. The client application apparatus of claim 21, wherein said client application apparatus comprises a workstation based system including a display screen and wherein said input means comprises:

25 a visual display on said display screen, the visual display including event filter icon means for generating a subwindow on said display screen when said event filter icon means is clicked on by an operator, the subwindow including said plurality of events, said subwindow adapted to receive an  
30 input from an operator, said subwindow generating signals in response to the input from the operator indicating the identity of specific ones of said plurality of events stored in said storage means that will be transmitted by said transmission and reception means to said other client  
35 application or will be received in said transmission and reception means from said other client applications.

25. A workstation based system comprising:

a display screen for displaying one or more windows;

one or more client applications adapted for presenting said one or more windows on said display screen for viewing by an operator, each of said one or more client applications including,

icon generating means for generating an icon in the window on said display screen of said each said client application, said icon being operatively responsive to an input provided to said icon by said operator for generating a signal in response to said input from said operator;

storage means for storing a plurality of events and a corresponding plurality of functions and a corresponding plurality of interest objects;

transmission and reception means for receiving one or more interest objects from other of said one or more client applications;

comparison means responsive to said input signal from said icon for comparing the one or more interest objects received in said transmission and reception means with said plurality of interest objects stored in said storage means and identifying one or more events stored in said storage means when the one or more interest objects received in said transmission and reception means corresponds to one or more of the plurality of interest objects stored in said storage means,

said comparison means selecting some or all or none of  
said one or more events stored in said storage means,  
identified by said comparison means, in response to said  
input signal from said icon; and

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framework means responsive to the selection of said some  
or all or none of said one or more events by said  
comparison means for transmitting said some or all or none  
of said one or more events from said each of said one or  
more client applications to said other of said one or more  
client applications.

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26. The workstation based system of claim 25, wherein said  
icon generating means generates an open state status icon,  
said comparison means selecting all of said one or more  
events stored in said storage means, said framework means  
transmitting all of said one or more events to said other of  
said one or more client applications.

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27. The workstation based system of claim 25, wherein said  
icon generating means generates a closed state status icon,  
said comparison means selecting none of said one or more  
events stored in said storage means, said framework means  
transmitting none of said one or more events to said other of  
said one or more client applications.

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28. The workstation based system of claim 25, wherein said  
icon generating means generates an event filter icon, said  
comparison means selecting either some or all of said one or  
more events stored in said storage means, said framework  
means transmitting said some or all of said one or more  
events to said other of said one or more client applications.

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